Loop-AM3440
Access DCS-MUX

AM3440-A

AM3440-B

AM3440-C

Features

- Full front access (ETSI) Shelf
- Support of DS0 DACS (Digital Access Cross-Connect System) with full cross-connect
- Dual controller, dual power with load sharing
- 1 for 1 protection, Y-BOX
- 1 for 1 protection, E1, T1, FOM
- PDH ring protection, QE1, QT1, FOM, Mini QE1
- Console, Telnet, SLIP, SNMP, and Inband management support
- Craft interface port for connection to external LCD display
- Compatible to a SNMP based GUI network management system and supported by LoopView and Loop iNMS
- Three types of chassis available: AM3440-A/AM3440-B/AM3440-C
- All the plug-in cards are hot-pluggable

Item	AM3440-A	AM3440-B	AM3440-C
Chassis	5U	2.5U	3U
# of Mini-slots	4	4	4
# of Single slots	12	3	5
Max. E1 Channels	64	28	36
Max. T1 Channels	52	16	24
Cross-Connect Backplane Capacity	128 Mbps	56 Mbps	72 Mbps

Description

The Loop-AM3440-A/B/C are Access DCS-MUXs that can combine various digital access interfaces into E1 or T1 lines for convenient transport and switching. The Loop-AM3440 Access DCS-MUX provides access for a variety of TDM, IP, and voice interfaces detailed on next page. These interfaces are compatible with other Loop products. Using these products, a DTE interface can be extended over copper wire pairs or any E1/T1 transport facility. For each Quad E1/T1 plug-in card, each card can have as many as DS0 124/96 time slots from G.SHDSL, RS232, X.21, V.35, V.36 and EIA530/RS449 interfaces, which can be multiplexed to fill 4 E1/T1 lines. AM3440 also supports fiber optical plug-in card, which can be used to aggregate up to 4 E1 channels onto a single fiber optical interface to connect with other AM3440 or O9310.

Each of the 3 models of AM3440, the A, the B, and the C, has a number of plug in slots in single slot size and mini size as shown in table at left. Card size to slot compatibility detailed on next page.

This unit is a full cross-connect and can act as a mini DACS. This means that one or more of the WAN ports can be used as a Drop & Insert function with fractional E1/T1 lines, which can be muxed into a full E1/T1 line.

Redundancy is available in dual CPU controller and power supply options, making it an excellent fit for critical applications. Although the chassis does not contain and has no need for fan cooling, an external fan tray is available.

The Loop-AM3440 supports local control and diagnostics by using an external 2-line by 40-character LCD display and keypads, or by using a VT-100 terminal connected to the console port. The Loop-AM3440 also supports Ethernet, SLIP, Telnet, and SNMP, so that it can be controlled and diagnosed from remote locations as well. An in-band management channel with GUI is available. In addition to the LCD display, there is LED indication for all plug-in cards.

Finally, the Loop-AM3440 consists of a rugged reinforced aluminum chassis, giving this equipment a more durable structure and a longer physical life.

Loop-AM3440 cards:

The Mini-Slot Cards plug into the Mini-Slots of the AM3440. The Single-Slot Cards plug into single slots, and the Dual-Slot Cards plugs into two adjacent single slots.

	Plug-in cards	AM3440-A	AM3440-B	AM3440-C
Mini-Slot	1-channel E1 (Single E1 interface)	√	√	√
	1-channel T1 (Single T1 interface)	√	√	√
	Mini Quad E1 (Four E1 interfaces)	√	√	√
	1-channel E1 ATM/Frame Relay	√	√	√
	1-channel T1 ATM/Frame Relay	√	√	√
	2-LAN port/32 WAN port Router	√	√	√
	2-LAN port/64 WAN port Router-A	√	√	√
	Fiber optical interface	√	√	√
	3-channel Terminal Server	√	√	√
	1-channel X.21	√	√	√
	1-channel V.35	√	√	√
	1-channel RS232	√	√	√
	1-channel EIA530	√	√	√
	Quad 2W/4W E&M (Four E&M voice interfaces)	×	√	√
	QFXS/QFXO (Four FXS/FXO voice interfaces)	×	√	√
Single-Slot	3-channel E1 (future option)	√	√	√
	4-channel E1	√	√	√
	4-channel T1	√	√	√
	2-channel G.SHDSL (2 pairs) w/o line power	√	√	√
	4-channel G.SHDSL (1 pair) w/o line power	√	√	√
	8-channel G.703 card at 64 Kbps data rate	√	√	√
	8-channel Dry Contact I/O	√	√	√
	8-channel Dry Contact I/O type B	√	√	√
	8-channel 2W/4W E&M	√	√	√
	12-channel FXS	√	√	√
	12-channel FXO	√	√	√
	12-channel Magneto	√	√	√
	1-channel low speed optical (C37.94)	√	√	√
	4-channel low speed optical (C37.94)	√	√	√
	8-channel RS232 with X.50 subrate	√	√	√
	8-LAN-port/ 64-WAN-port Router-B	√	√	√
	Conference card	√	√	√
Dual-Slot	6-channel X.21/V.11	√	√	√
	6-channel V.35	√	√	√
	6-channel V.36	√	√	√
	6-channel EIA530/RS449 card	√	√	√
	5-channel RS232 with X.50 subrate	√	√	√
	24-channel FXS	√	√	√
	24-channel FXO	√	√	√
	2-channel G. SHDSL (2 pairs) with line power	√	×	×
	4-channel G. SHDSL (1 pair) with line power	√	×	×

Note: √ = Supported

× = Not supported

Ordering Information

To specify options, choose from the list below:

Note:

1. RoHS compliant units are identified by the letter **G** appearing immediately at the end of ordering code.
2. AM3440 chassis types:

   AM3440-CHA: 5U chassis with 128 Mb/s cross-connect capacity backplane

   AM3440-CHB: 2.5U chassis with 56 Mb/s cross-connect capacity backplane

   AM3440-CHC: 3U chassis with 72 Mb/s cross-connect capacity backplane

Model (non RoHS compliant)	Model (RoHS compliant)	Description	Note
Main Unit			
Loop-AM3440-CHA	Loop-AM3440-CHA-**G**	Wideband Main Unit without CPU, power and plug-in cards	AM3440-A type Chassis
Loop-AM3440-CHB	Loop-AM3440-CHB-**G**	Wideband Main Unit without CPU, power and plug-in cards	AM3440-B type Chassis
Loop-AM3440-CHC	Loop-AM3440-CHC-**G**	Wideband Main Unit without CPU, power and plug-in cards	AM3440-C type Chassis
CPU Module			
Loop-AM3440-CCA-T	Loop-AM3440-CCA-T-**G**	CPU card with T1 External Clock (order two for redundancy)	
Loop-AM3440-CCA-E	Loop-AM3440-CCA-E-**G**	CPU card with E1 External Clock (order two for redundancy)	
Mini Plug-in Module (Select 1 to 4 cards from list below)			
Loop-AM3440-E75	Loop-AM3440-E75-**G**	1-channel of E1plug-in card w/ 75 ohm	
Loop-AM3440-E120	Loop-AM3440-E120-**G**	1-channel of E1 plug-in card w/ 120 ohm	
Loop-AM3440-T1	Loop-AM3440-T1-**G**	1-channel T1 plug-in card	
Loop-AM3440-M4E75	Loop-AM3440-M4E75-**G**	Mini Quad E1 plug-in card with 75 ohm	Includes a one meter conversion cable (Loop-ACC-CAB-DB25M-100-8BNCM)
Loop-AM3440-M4E120	Loop-AM3440-M4E120-**G**	Mini Quad E1 plug-in card with 120 ohm	Includes a one meter conversion cable (Loop-ACC-CAB-DB25M-100-4RJ48M)
Loop-AM3440-AFRE	Loop-AM3440-AFRE-**G**	E1 Frame Relay to ATM inter-working or Frame Relay to Frame Relay concentration plug-in card	
Loop-AM3440-AFRT	Loop-AM3440-AFRT-**G**	T1 Frame Relay to ATM inter-working or Frame Relay to Frame Relay concentration plug-in card	
Loop-AM3440-RT	Loop-AM3440-RT-G	2-LAN ports/32 WAN port Router/Bridge plug-in card	
Loop-AM3440-RTA	Loop-AM3440-RTA-**G**	2-LAN ports/64 WAN port router/bridge plug-in card	
Loop-AM3440-FOM-opt	Loop-AM3440-FOM-opt-**G**	Fiber Optical plug-in card	For **opt** option, please refer to the table below for detail information
Loop-AM3440-TS	Loop-AM3440-TS-**G**	3-chanel Terminal Server plug-in card	Includes a one meter conversion cable (Loop-ACC-CAB-DB44M -100- 2DB25F-1DB09F-TS)
Not available	Loop-AM3440-1X21-G	1-channel X.21 plug-in card	
Not available	Loop-AM3440-1RS232- **G**	1-channel RS232 plug-in card	
Not available	Loop-AM3440-1V35- **G**	1-channel V.35 plug-in card	
Not available	Loop-AM3440-1E530- **G**	1-channel EIA530 plug-in card	

Loop-AM3440-Q2EM-**m**-T**n**-**x**	Loop-AM3440-Q2EM-**m**-T**n**-**x**-**G**	Quad 2 Wire E&M voice plug-in card	AM3440-CHB and AM3440-CHC only Where **m** = **B** for normal E&M or TO (transmission only) = **A** for tandem operation **n** = **1** to **5** E&M Signaling Type = **O** for TO (transmission only) For **m**, **n** and **x** option, please refer to the table below for detail information
Loop-AM3440-Q4EM-**m**-T**n**-**x**	Loop-AM3440-Q4EM-**m**-T**n**-**x**-**G**	Quad 4 Wire E&M voice plug-in card	
Loop-AM3440-QFXS-**x**	Loop-AM3440-QFXS-**x**-**G**	Quad FXS voice plug-in card	AM3440-CHB and AM3440-CHC only GS = Ground Start MP = Metering Pulse Transmit 12/16 KHz For -48 Vdc (SDB) and 100 to 240 Vac (SAB) power supply only. For **x** option, please refer to the table below for detail information
Loop-AM3440-QFXS-M-**x**	Loop-AM3440-QFXS-M-**x**-**G**	Quad FXS with MP 16 KHz voice plug-in card	
Loop-AM3440-QFXS-M12-**x**	Loop-AM3440-QFXS-M12-**x**-**G**	Quad FXS with MP 12 KHz voice plug-in card	
Loop-AM3440-QFXS-GS-**x**	Loop-AM3440-QFXS-GS-**x**-**G**	Quad FXS with GS plug-in card	
Loop-AM3440-QFXS-GM-**x**	Loop-AM3440-QFXS-GM-**x**-**G**	Quad FXS with GS and MP 16 KHz voice plug-in card	
Loop-AM3440-QFXO-**x**	Loop-AM3440-QFXO-**x**-**G**	Quad FXO voice plug-in card	AM3440-CHB and AM3440-CHC only GS = Ground Start MP = Metering Pulse Receive 12/16 KHz For **x** option, please refer to the table below for detail information
Loop-AM3440-QFXO-M-**x**	Loop-AM3440-QFXO-M-**x**-**G**	Quad FXO with MP 16 KHz voice plug-in card	
Loop-AM3440-QFXO-M12-**x**	Loop-AM3440-QFXO-M12-**x**-**G**	Quad FXO with MP 12 KHz voice plug-in card	
Loop-AM3440-QFXO-GS-**x**	Loop-AM3440-QFXO-GS-**x**-**G**	Quad FXO with GS plug-in card	
Loop-AM3440-QFXO-GM-**x**	Loop-AM3440-QFXO-GM-**x**-**G**	Quad FXO with GS and MP 16 KHz voice plug-in card	
Single Slot Plug-in Module			
Not available	Loop-AM3440-3E1-**cc**-**G**	3-channel E1 plug-in card with DS0 (64K bps) SNCP protection	For **cc** option, please refer to the table below for detail information For controller hardware version **H** and software version **7.05.01** or newer versions. Future option
Loop-AM3440-4E1-**cc**	Loop-AM3440-4E1-**cc**-**G**	4-channel E1 plug-in card	For **cc** option, please refer to the table below for detail information
Loop-AM3440-4T1	Loop-AM3440-4T1-**G**	4-channel T1 plug-in card	
Loop-AM3440-2GH	Loop-AM3440-2GH-**G**	2-channel G.SHDSL plug-in card (2 pair)	
Loop-AM3440-4GH	Loop-AM3440-4GH-**G**	4-channel G.SHDSL plug-in card (1 pair)	
Loop-AM3440-8CD	Loop-AM3440-8CD-**G**	8-channel G.703 plug-in card at 64 Kbps data rate	
Loop-AM3440-8DC	Loop-AM3440-8DC-**G**	8-channel dry contact plug-in card with maximum voltage 100 Vdc or 250 Vac	
Not available	Loop-AM3440-8DCB-**G**	8-channel dry contact type B plug-in card with maximum voltage 220 Vdc or 250 Vac	
Loop-AM3440-1C37	Loop-AM3440-1C37-**G**	1- channel C37.94 plug-in card	
Loop-AM3440-4C37	Loop-AM3440-4C37-**G**	4- channel C37.94 plug-in card	
Loop-AM3440-8RS232-RJ	Loop-AM3440-8RS232-RJ-**G**	8-port RS232 plug-in card with X.50 subrate multiplexing scheme and X.54 encoding, with 8 RJ48 connectors for 8 RS232 Async ports	

Loop-AM3440-8RS232-DB	Loop-AM3440-8RS232-DB-**G**	8-port RS232 plug-in card with X.50 subrate multiplexing scheme and X.54 encoding, with 2 RJ48 connectors and 2 DB44 connectors for Async and Sync ports	Two conversion cables are included (DB44 connector to two DB25 and one DB9 connector; (Loop-ACC-CAB-DB44M-100-2DB25F-1DB09F-DB).
Loop-AM3440-RTB	Loop-AM3440-RTB-**G**	8-LAN ports/64 WAN ports router/bridge plug-in card	For controller hardware version **F** and software version **6.05.02** or newer versions.
Not available	Loop-AM3440-CONF-**G**	Conference plug-in card with two RS232 data ports, two FXS ports and two E&M ports	For controller hardware version **F** and software version **7.05.01** or newer versions.
Loop-AM3440-8EM-**x**	Loop-AM3440-8EM-**x**-**G**	8-channel 2W/4W E&M plug-in card	For **x** option, please refer to the table below for detail information
Loop-AM3440-12FXS-**sn**	Loop-AM3440-12FXS-**sn**-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and PLAR. Without Ground Start and Metering Pulse	12FXS cards can only be used with -48 Vdc (SD and S5) power module and -125 Vdc (SD125) power module 12FXS-GMP includes all FXS card functions For **sn** option, please refer to the table below for detail information
Loop-AM3440-12FXS-P-**sn**	Loop-AM3440-12FXS-P-**sn**-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [PLAR bit programmable]. Without Ground Start and Metering Pulse	
Loop-AM3440-12FXS-M	Loop-AM3440-12FXS-M-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [Metering Pulse].	
Loop-AM3440-12FXS-MPP	Loop-AM3440-12FXS-MPP-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [PLAR bit programmable] and [Metering Pulse].	
Loop-AM3440-12FXS-GS	Loop-AM3440-12FXS-GS-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [Ground Start].	
Loop-AM3440-12FXS-GM-**sn**	Loop-AM3440-12FXS-GM-**sn**-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [Ground Start] and [Metering Pulse].	
Loop-AM3440-12FXS-GMP	Loop-AM3440-12FXS-GMP-**G**	12-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [PLAR bit programmable], [Ground Start] and [Metering Pulse].	
Loop-AM3440-12FXO	Loop-AM3440-12FXO-**G**	12-channel FXO plug-in card with 600/900 Impedance, Battery Reverse and Loop Start. Without Ground Start and Metering Pulse	12FXO-GM includes all FXO card functions
Loop-AM3440-12FXO-M	Loop-AM3440-12FXO-M-**G**	12-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and [Metering Pulse].	
Loop-AM3440-12FXO-GS	Loop-AM3440-12FXO-GS-**G**	12-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and [Ground Start].	
Loop-AM3440-12FXO-GM	Loop-AM3440-12FXO-GM-**G**	12-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, [Ground Start] and [Metering Pulse].	

Loop-AM3440-12MAG-1G	Loop-AM3440-12MAG-1G-**G**	12-channel Magneto plug-in card with L1. GND	12MAG cards can only be used with -48 Vdc (SD and S5) power module and -125 Vdc (SD125) power module 12MAG-1G2 includes all MAG Card functions.
Loop-AM3440-12MAG-12	Loop-AM3440-12MAG-12-**G**	12-channel Magneto plug-in card with L1, L2	
Loop-AM3440-12MAG-1G2	Loop-AM3440-12MAG-1G2-**G**	12-channel Magneto plug-in card with L1, L2, and L1. GND	
Dual Slot Plug-in Module			
Loop-AM3440-6X21A	Loop-AM3440-6X21A-**G**	6-channel X.21/V.11 plug-in card with DB15 connector	
Loop-AM3440-6V35A	Loop-AM3440-6V35A-**G**	6-channel V.35 plug-in card with DB25S connector via conversion cable to M34 (2M bits per channel)	
Loop-AM3440-6V36A	Loop-AM3440-6V36A-**G**	6-channel V.36 plug-in card with DB25 connector via conversion cable to DB37	
Loop-AM3440-6E530A	Loop-AM3440-6E530A-**G**	6-channel EIA530 plug-in card with DB25 connector	
Loop-AM3440-6RS449A	Loop-AM3440-6RS449A-**G**	6-channel EIA530/RS449 plug-in card with DB25 connector via conversion cable to DB37	
Loop-AM3440-5RS232	Loop-AM3440-5RS232-**G**	5-channel RS232 plug-in card with X.50 subrate plug-in module	
Loop-AM3440-2GHL	Not available	2-channel G.SHDSL plug-in card with line power source (140 Vdc, 110mA), (2 pair)	For AM3440-CHA only Factory installed option available with -48 Vdc powered chassis only. With line power, takes 2 DTE slots per card. Fan tray required.
Loop-AM3440-4GHL	Not available	4-channel G.SHDSL plug-in card with line power source (190 Vdc, 60mA), (1 pair)	For AM3440-CHA only Factory installed option available with -48 Vdc powered chassis only. With line power, takes 2 DTE slots per card. Fan tray required.

Loop-AM3440-24FXS	Loop-AM3440-24FXS-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and PLAR. Without Ground Start and Metering Pulse	24FXS-GMP includes all FXS card functions. 24FXS cards can only be used with -48 Vdc (SD and S5) power module and -125 Vdc (SD125) power module
Loop-AM3440-24FXS-P	Loop-AM3440-24FXS-P-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [PLAR bit programmable]. Without Ground Start and Metering Pulse	
Loop-AM3440-24FXS-M	Loop-AM3440-24FXS-M-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [Metering Pulse].	
Loop-AM3440-24FXS-MPP	Loop-AM3440-24FXS-MPP-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [PLAR bit programmable] and [Metering Pulse].	
Loop-AM3440-24FXS-GS	Loop-AM3440-24FXS-GS-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR and [Ground Start].	
Loop-AM3440-24FXS-GM	Loop-AM3440-24FXS-GM-**G**	24-channel FXS plug-in card e with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [Ground Start] and [Metering Pulse].	
Loop-AM3440-24FXS-GMP	Loop-AM3440-24FXS-GMP-**G**	24-channel FXS plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, PLAR, [PLAR bit programmable], [Ground Start] and [Metering Pulse].	
Loop-AM3440-24FXO	Loop-AM3440-24FXO-**G**	24-channel FXO plug-in card with 600/900 Impedance, Battery Reverse and Loop Start. Without Ground Start and Metering Pulse	24FXO-GM includes all FXO card functions.
Loop-AM3440-24FXO-M	Loop-AM3440-24FXO-M-**G**	24-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and [Metering Pulse].	
Loop-AM3440-24FXO-GS	Loop-AM3440-24FXO-GS-**G**	24-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start and [Ground Start].	
Loop-AM3440-24FXO-GM	Loop-AM3440-24FXO-GM-**G**	24-channel FXO plug-in card with 600/900 Impedance, Battery Reverse, Loop Start, [Ground Start] and [Metering Pulse].	
Accessories			
Power Module			
Loop-AM3440-SD	Loop-AM3440-SD-**G**	Single -48 Vdc (-36 to -75 Vdc) Power Module (100W)	For AM3440-CHA only Order 2 single DC for redundancy
Loop-AM3440-S5	Loop-AM3440-S5-**G**	Single -48 Vdc (-36 to -75 Vdc) Power Module (150W)	For AM3440-CHA only Order 2 single DC for dual DC application.
Loop-AM3440-S524	Loop-AM3440-S524-**G**	Single -24 Vdc (-18 to -36 Vdc) Power Module (150W)	For AM3440-CHA only Cannot be used with FXS Card or MAG card.

Loop-AM3440-SDB	Loop-AM3440-SDB-**G**	Single -48 Vdc (-36 to -75 Vdc) Power Module (100W)	AM3440-CHB and AM3440-CHC only Order 2 single DC for redundancy
Loop-AM3440-SAB	Loop-AM3440-SAB-**G**	Single AC plug-in power supply (100 to 240 Vac, 50/60 Hz)	AM3440-CHB and AM3440-CHC only For AC choose an appropriate power cord
Loop-AM3440-SD125	Loop-AM3440-SD125-**G**	Single -125 Vdc (-40 to -150 Vdc) Power Module (100W)	For AM3440-CHA only Order 2 single SD125 for redundancy If the user orders -125 Vdc power module, the maximum number of cards allowed in slot 1 to 12 is: • Four 12-channel FXS • Nine 12-channel Magneto • Eleven 8-channel 2W/4W E&M • Two 4-channel G. SHDSL (1 pair) with line power • Three 2-channel G. SHDSL (2 pairs) with line power • Two 24-channel FXS There are no limitations for other plug-in cards in slot 1 to 12. There are no limitations for any plug-in cards in slot A to D. For power consumption details, please refer to AM3440-A User's Manual.
User's Manual			
Loop-AM3440-UM	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.		For AM3440-CHA only
Loop-AM3440-UMB	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.		For AM3440-CHB only
Loop-AM3440-UMC	User's Manual (paper, hard copy-optional). A CD version of the manual is already included as standard equipment.		For AM3440-CHC only
Power Cord(All power cord are RoHS compliant)			
Loop-ACC-PC-USA	AC power cord for Taiwan/America		
Loop-ACC-PC-EU	AC power cord for Europe		
Loop-ACC-PC-UK	AC power cord for UK		
Loop-ACC-PC-AUS	AC power cord for Australia		
Loop-ACC-PC-CH	AC power cord for China		
Power Adaptor(All power adaptor are RoHS compliant)			
Loop-ACC-APA-240-**G**	240 Watt, AC (100 to 120 Vac, 5.0A/200 to 240 Vac, 2.5A auto sensing) to DC (-48 Vdc, 5A) adaptor for USA		
Loop-ACC-APE-240-**G**	240 Watt, AC (100 to 120 Vac, 5.0A/200 to 240 Vac, 2.5A auto sensing) to DC (-48 Vdc, 5A) adaptor for Europe		
Loop-ACC-APU-240-**G**	240 Watt, AC (100 to 120 Vac, 5.0A/200 to 240 Vac, 2.5A auto sensing) to DC (-48 Vdc, 5A) adaptor for UK		

Fan Tray			
oop-AM3440-FAN	Loop-AM3440-FAN-**G**	Fan tray	For AM3440-CHA only Power supplied from rear of chassis. If total power consumption of device and cards is more than 60 Watts, an additional fan try is required. For power consumption and fan tray plan, please refer to AM3440-A User's Manual.
FXO Box			
Loop-AM3440-FXO BOX	Support FXO Interface Battery Feed		
External LCD			
Loop-AM3440-LCD	Loop-AM3440-LCD-**G**	External LCD and Keypad	only cover selected plug-in cards only, contact your nearest Loop sales representative for detail
Software			
Loop-AM3440-ERING	ULSR-PDH Ring software		Used with 4E1, M4E75, M4E120 and FOM
Loop-AM3440-TRING	ULSR-PDH Ring software		Used with 4T1
Conversion Cables(All conversion cables are RoHS compliant)			
Loop-ACC-CAB-DB25M-100-8BNCM	DB25/Male to eight BNC/Male cable; Length: 100 cm		Used in Loop-AM3440-M4E75 plug-in card
Loop-ACC-CAB-DB25M-100-4RJ48M	DB25/Male to four RJ48C/Male cable; Length: 100 cm		Used in Loop-AM3440-M4E120 plug-in card
Loop-ACC-CAB-DB44M-100-2DB25F-1DB09F-DB	DSUB-44 pin/Male to two DSUB-25 pin/Female- one DSBU-9 pin/Female (8P8C) plug, Length:100cm		Used in Loop-AM3440-8RS232-DB plug-in card
Loop-ACC-CAB-DB44M-100-2DB25F-1DB09F-TS	DSUB-44 pin/Male to two DSUB-25 pin/Female- one DSBU-9 pin/Female (8P8C) plug, Length:100cm		Used in Loop-AM3440-TS plug-in card
Loop-ACC-CAB-DB25M-30-1M34F	DSUB-25pin/Male to M34/Female V.35 Conversion cable Length: 30 cm		Used in Loop-AM3440-6V35A-**G** and Loop-AM3440-1V35-**G** plug-in cards
Loop-ACC-CAB-DB25M-30-1DB37F	DSUB-25pin/Male to DSUB-37/Female RS449 Conversion cable Length: 30 cm		Used in Loop-AM3440-6V36A-**G** and Loop-AM3440-6R449A-**G** plug-in cards
Y-Box(All Y-Box are RoHS compliant)			
Loop-VV-B-**G**	1 for 1 protection Y-Box with BNC connectors (4-E1)		Used with 4E1
Loop-VV-R-**G**	1 for 1 protection Y-Box with RJ48C connectors (16-E1)		Used with 4E1
Loop-VV-T-**G**	1 for 1 protection Y-Box with RJ48C connectors (16-T1)		Used with 4T1
Blank Panels(All blank panels are RoHS compliant)			
30.000333.A00-**G**	Blank Panel for Power Supply Slot (flat)		For AM3440-CHA only
30.001257.A00-**G**	Blank Panel for Power Supply Slot (flat)		AM3440-CHB and AM3440-CHC only
30.000349.A00-**G**	Blank Panel for Controller Slot (flat)		For use in any AM3440 chassis
30.000335.A00-**G**	Blank Panel for mini Slot A-D (flat)		For use in any AM3440 chassis
30.000331.A00-**G**	Blank Panel for Slot 1-12 (flat)		For use in any AM3440 chassis
30.001028.A00-**G**	Blank Panel for Power Slot (u-shape)		For AM3440-CHA only
30.001029.A00-**G**	Blank Panel for Controller (u-shape)		For use in any AM3440 chassis
30.001030.A00-**G**	Blank Panel for mini Slot A-D (u-shape)		For use in any AM3440 chassis
30.001027.A00-**G**	Blank Panel for Slot 1-12 (u-shape)		For use in any AM3440 chassis

For 4E1 and 3E1cards

■ Where **cc** is used to select connector:

cc =	Description	Note
RJ	RJ48C connector	
BNC	BNC connector	

For FOM card

■ Where **opt** is used to select optical module type (All optical modules are RoHS compliant):

opt =	Description	Note
SAA	Single optical module with dual uni-directional fiber, 1310 nm, SC optical connector, 30 km reach (20dB) ***- S1.1***	Use dual fiber Units delivered ITU-T G.957 application code
SBB	Single optical module with dual uni-directional fiber, 1310 nm, SC optical connector, 50 km reach (30dB) ***- L1.1***	
SCC	Single optical module with dual uni-directional fiber, 1310 nm, FC optical connector, 30 km reach (20dB) ***- S1.1***	
SDD	Single optical module with dual uni-directional fiber, 1550 nm, SC optical connector, 20 km reach (12dB) ***- S1.2***	
SEE	Single optical module with dual uni-directional fiber, 1550 nm, SC optical connector, 100 km reach (40dB) ***- L1.2***	
SSM	Single optical module with single bi-directional fiber (master), 1310 nm transmit and 1550 receive, SC optical connector, 30 km reach (20dB) ***- S1.1/ S1.2***	1310 nm from master to slave Order **SSM** to use with **SSS** Use 1 fiber ITU-T G.957 application code
SSS	Single optical module with single bi-directional fiber (slave), 1310 nm receive and 1550 transmit, SC optical connector, 30 km reach (20dB) ***- S1.1/ S1.2***	1550 nm from slave to master Order **SSS** to use with **SSM** Use 1 fiber ITU-T G.957 application code

Note: For other special optical modules, please contact your nearest Loop sales representative.

For Quad 2W/4W E&M card:

■ Where **m** is used to select QEM card signaling side (must select one):

m =	Description	Note
B	B (carrier side) connects to A side.	
A	A (exchange side) connects to B side. A side M lead to B side M lead, A side E lead to B side E lead.	

■ Where **n** is used to select QEM card signaling type (must select one):

n =	Description	Note
O	For voice transmission only.	Circuit Type doesn't matter.
1	Type I (Original) E&M Signaling Circuit	M lead provides discharge for the A side.
2	Type II Circuit. This design attempts to reduce ground noise by adding two leads: SB (Signal to Battery) and SG (Signal to Ground)	Reduced ground noise. Ground current is eliminated at the cost of two more wires per circuit.
3	Type III Circuit. The SG lead serves as a discharge for the M lead. Reduces delay caused by combination of (a) low current electronic detectors, and (b) long runs of the E and M leads.	Type III is rare because ground currents on the E return would cause noise
4	Type IV Circuit. Based on the Type 2 circuit. This E&M circuit provides symmetry.	
5	Type V Circuit. For applications where ground noise is not an issue. Based on the Type 2 circuit.	

For voice card(8-channel 2W/4W E&M, Quad 2W/4W E&M and QFXS/QFXO):

■ Where **x** is used to select all of voice card signaling bits. If this option is not required, omit the **x** field in the ordering code.

	x =	Description	Note
8EM	**E**	Follows ETSI signaling bits	
	A	Follows ANSI signaling bits	Jumper selectable for all channels
	R	Reverse for ON-HOOK and OFF-HOOK signaling bits exchange	
	S	Follows customer's special bit or function assignment	
	AR	Follows ANSI signaling bits and reverse bit	
QEM	**E**	Follows ETSI signaling bits	
	A	Follows ANSI signaling bits	
	S	Follows customer's special bits assignment	
QFXS/QFXO	**A**	Follows ANSI signaling bits	■**A** and **S** are for QFXS/QFXO
	S	Follows customer's special bits assignment	
	T	Trunk condition OFF-HOOK	■ **T**, **AT**, **ST** are for QFXO only
	AT	Follows ANSI signaling bits w/ trunk condition OFF-HOOK	
	ST	Follows customer's special bits assignment w/ trunk condition OFF-HOOK	

Note:

1. For S (customer's special bit), please contact your nearest Loop sales representative.
2. If **x** is not selected from table above, the default setting for signaling bits is ETSI and for trunk condition is ON-HOOK.

For 12-channel FXS card:

■ Where **sn** is used to select special function. If this option is not required, omit the **sn** field in the ordering code.

sn =	Description	Note
S1	FXS Loop Feed = -48 Vdc with 35 mA current limit	
S4	Remove alarm tone	
S5	Double ring tone transmit	

Note: For **sn** (special function), please contact your nearest Loop sales representative.

The list shown below is the discontinued chassis and plug in cards. For detail info, please contact your nearest Loop sales representative.

Model	Description	Note
Loop-AM3440-CH	32 Mb/s cross-connect capacity backplane t without CPU, power and plug-in cards	AM3440-CH type Chassis
Loop-AM3440-6U	6-channel IDSL plug-in card	
Loop-AM3440-10U	10-channel IDSL plug-in card	
Loop-AM3440-3H	3-channel MDSL plug-in card (2Mb for 3-channel)	
Loop-AM3440-3HA	3-channel MDSL plug-in card for	AM3440-A/B/C only
Loop-AM3440-3HAL	3-channel 6Mbits MDSL plug-in module with line power source	AM3440-A only Factory installed option available with -48 Vdc powered chassis only.
Loop-AM3440-ODP	8-channel OCU-DP plug-in card	AM3440-A/B/C only

Examples 1:

Loop-AM3440-CHA, Loop-AM3440-CCA-E, Loop-AM3440-S5, Loop-AM3440-4E1-RJ, Loop-AM3440-10U, Loop-AM3440-FAN:

For 3440-A type chassis with a CPU card(E1 external clock), a single -48 Vdc 150W power module, 4-channel E1 interface with RJ48C connectors, one 10-port IDSL plug-in module and fan tray.

Examples 2:

Loop-AM3440-CHB, Loop-AM3440-CCA-E, Loop-AM3440-SDB, Loop-AM3440-M4E75, Loop-AM3440-8CD:

For 3440-B type chassis with a CPU card(E1 external clock), a single -48 Vdc 100W power module, one Mini Quad E1 interface with 75 ohm and one 8-channel G.703 interface at 64 Kbps data rate.

Examples 3:

Loop-AM3440-CHC, Loop-AM3440-CCA-E, Loop-AM3440-SDB, Loop-AM3440-M4E120, Loop-AM3440-2GH:

For 3440-C type chassis with a CPU card(E1 external clock), a single -48 Vdc 100W power module, one Mini Quad E1 interface with 120 ohm and one 2-channel G.SHDSL plug-in module (2 pair).

LOOP-AM3440 Access DCS-MUX Product Specifications

Network Line Interface - T1

Line Rate	1.544 Mbps ± 32ppm	Output Signal	DSX1w/0, -7.5, -15 dB LBO
Line Code	AMI or B8ZS	Framing	D4/ESF (selectable)
Input Signal	DSX-1 0 dB to -30 dB w/ALBO	Connector	RJ48C

Network Line Interface - E1

Line Rate	2.048 Mbps ± 50 ppm	Framing	ITU G.704
Line Code	AMI or HDB3	Connector	BNC/RJ48C
Input Signal	ITU G.703	Electrical	75 ohm Coax/120 ohm twisted pair
Output Signal	ITU G.703	Jitter	ITU G.823

Network Line Interface - Mini 4E1

Line Rate	2.048 Mbps ± 50 ppm	Framing	ITU G.704
Line Code	AMI or HDB3	Connector	DB25S
Input Signal	ITU G.703	Electrical	75 ohm Coax/120 ohm twisted pair
Output Signal	ITU G.703	Jitter	ITU G.823

Network Line Interface - 3E1*

Line Rate	2.048 Mbps ± 50 ppm	Framing	ITU G.704
Line Code	AMI or HDB3	Connector	BNC/RJ48C
Input Signal	ITU G.703	Electrical	75 ohm Coax/120 ohm twisted pair
Output Signal	ITU G.703	Jitter	ITU G.823
Function	Support DS0-SNCP		

Network Line Interface - 4E1

Line Rate	2.048 Mbps ± 50 ppm	Framing	ITU G.704
Line Code	AMI or HDB3	Connector	BNC/RJ48C
Input Signal	ITU G.703	Electrical	75 ohm Coax/120 ohm twisted pair
Output Signal	ITU G.703	Jitter	ITU G.823

Network Line Interface - 4T1

Line Rate	1.544 Mbps ± 32 ppm	Output Signal	DSX1w/0, -7.5, -15 dB LBO
Line Code	AMI or B8ZS	Framing	D4/ESF (selectable)
Input Signal	DSX-1 0 dB to -30 dB w/ALBO	Connector	RJ48C

ATM Frame Relay Network Line Interface

Supporting Network Interworking (FRF.5) and service interworking (FRF.8).
Network Interface:

- T1 Module: *T1 ATM UNI*
  FR (n x 64 Kbps, n=1 to 24)
- E1 Module: *E1 ATM UNI*
  FR (n x 64 Kbps, n= 1 to 31)

Up to 31 logical FR channels can be concentrated/ de-concentrated to FR or ATM.
Service Ports:

- T1/FT1 interface: *n x 64 Kbps, n=1 to 24*
- E1/FE1 interface: *n x 64 Kbps, n= 1 to 31*

Support HDLC to FR
Support HDLC to ATM
Supporting FR to FR multiplexing.
Support up to 128 DLCIs for total of 31 FR interfaces.
Support up to 128 VCs.
Peak cell rate on DLCI basis.
Manufacturing disable/enable ATM scrambling for internal testing (E1 ATM only).
AAL0 and AAL5 are supported in the ATM adaptation layer.
Support VBR service.
ANSI and ITU FR management protocols are supported.
Flash memory software download through RS485.
Only the PVC type of ATM/FR service is supported.

Router Interface

Number of ports	2 LAN ports, Max. 32 WAN ports
Physical Interface	10 BaseT x 1, 10/100 BaseT x 1
Connector	RJ45
Routing protocol	RIP-I, RIP-II
Data Rates	Channelized N x 64 Kbps up to T1/E1 capacity
Supporting Protocols	TCP/IP, PPP, HDLC

Router-A Interface

Number of ports	2 LAN ports, Max. 64 WAN ports, Each WAN port has data rate n x 64K bps, 1≤ n ≤32 (≤ 4Mbps for total of all 64 WAN ports
Physical Interface	10/100 BaseT x 2
Connector	RJ45
Routing protocol	RIP-I, RIP-II, OSPF, Static
Supporting Protocols	PPP (IPCP/BCP), MLPPP, HDLC, Frame Relay, and Cisco compatible HDLC, NAT/NAPT, DHCP
Diagnostic	Ping, Trace route
QoS	Rate limit

Router-B Interface

Number of ports	8 LAN ports, Max. 64 WAN ports. Each WAN port has data rate n x 64K bps, 1≤ n ≤32 (≤ 8Mbps for total of all 64 WAN ports
Physical Interface	10/100 BaseT x 8
Connector	RJ45
Routing protocol	RIP-I, RIP-II, OSPF, Static
Supporting Protocols	PPP (IPCP/BCP), MLPPP, HDLC, Frame Relay, and Cisco compatible HDLC, NAT/NAPT, DHCP
Diagnostic	Ping, Trace route
QoS	Rate limit

Terminal Server Interface

Connector	One DB-44 conversion cable to one DB-9 and two DB-25 connectors
Ports	One Async RS232 port, two Async/Sync RS232 ports. The two Async/Sync ports can be configured independently as Asynchronous or Synchronous.
Data Rate	Async: 1.2kbps, 2.4kbps, 4.8kbps, 9.6kbps, 19.2kbps, 38.4kbps Sync: 64 kbps
Layer 2 Protocol of RS232 Async	SLIP or raw data
Layer 2 Protocol of RS232 Sync	PPP
Terminal Server Function	Supports Telnet
Router Function	RIP-I, RIP-II, Static Route

Optical Fiber Interface Characteristics

Optical Module	Fiber Direction	Wavelength (nm)	Connector	Distance (km)	Power (dB)
SAA	Dual uni-directional	1310	SC (Subscriber Connector)	30	20
SBB	Dual uni-directional	1310	SC (Subscriber Connector)	50	30
SCC	Dual uni-directional	1310	FC (Fiber Connector)	30	20
SDD	Dual uni-directional	1550	SC (Subscriber Connector)	20	12
SEE	Dual uni-directional	1550	SC (Subscriber Connector)	100	40
SSM	Single bi-directional (master)	1310/1550	SC (Subscriber Connector)	30	20
SSS	Single bi-directional (slave)	1550/1310	SC (Subscriber Connector)	30	20

NOTE: Other fiber optical options available on special order

G.SHDSL Line Interface

Number of ports	2 or 4
Line Rate for 4-channel G.shdsl	n x 64Kbps (n= 3 to 31)
Line Rate for 2-channel G.shdsl	n x 64Kbps (n= 3 to 15)
Line Code	16-TCPAM, full duplex with adaptive echo cancellation
Connector	RJ45
Electrical	Unconditioned 19-26 AWG twisted pair
Sealing current	Max. 20 MA source current
Clock Source	From System, Line
Diagnostic Test	G.SHDSL Loopback: To-LINE, To-bus BERT: QRSS

DTE Interface (X.21)

Data Port	Up to six 6-port DTE X.21 card; 1-port DTE X.21 card
Data Rate	56 or 64 Kbps, n = 1 to 32
Connector	DB15

DTE Interface (V.35)

Data Port	Up to six 6-port DTE V.35 card; ; 1-port V.35 card
Data Rate	56 or 64 Kbps, n = 1 to 32
Connector	DB25S (optional conversion cable DB25S to M34 connector)

DTE Interface (V.36)

Data Port	Up to six 6-port DTE V.36 card
Data Rate	56 or 64 Kbps, n = 1 to 32
Connector	DB25S (optional conversion cable DB25S to DB37 connector)

DTE Interface (EIA530/RS449)

Data Port	Up to six 6-port EIA530 DTE card; 1-port EIA530 card
Data Rate	56 or 64 Kbps, n = 1 to 32
Connector	DB25S (optional conversion cable DB25S male to DB37 female connector for RS449)

DTE Interface (RS232)

Data Port	1-port RE232 card
Data Rate	56 or 64 Kbps *n, n=1 - 2
Mapping	Any sequential time slots

DTE Interface (RS232-X.50 mux. 5-port)

Data Port	Up to six 5-port RS232 cards with X.50 plug-in, subrate, with subrate mux	
MUX	(a) 5 independent RS232, or (b) 5 subrate RS232 (X.50) muxed to 64K	
Data Rate	Mode (a) 5 independent RS232：	1.2K, 2.4K, 4.8K, 9.6K, 19.2K, 38.4K, 48K , 64K SYNC
		1.2K, 2.4K, 4.8K, 9.6K, 19.2K ASYNC
	Mode (b) 5 mux together：	1.2K, 2.4K, 4.8K, 9.6K SYNC
		1.2K, 2.4K, 4.8K, 9.6K ASYNC
	NOTE: Mode (a) and mode (b) cannot be mixed.	
Connector	DB25S	

DTE Interface (RS232-X.50 mux. 8-port)

Data Port	Up to twelve 8-port RS232 cards		
MUX	Maximum 5 subrate port per 64K bps		
Data Rate	Asynchronous	Mux mode	0.6K, 1.2K, 2.4K, 4.8K, 9.6K
		Independent mode	0.6K, 1.2K, 2.4K, 4.8K, 9.6K, 19.2K
	Synchronous	Mux mode	0.6K, 1.2K, 2.4K, 4.8K, 9.6K
		Independent mode	0.6K, 1.2K, 2.4K, 4.8K, 9.6K, 19.2K, 38.4K, 48K, 64K

	Port Number							
Card Type	1	2	3	4	5	6	7	8
Eight RJ48	Async	Async	Async	Async	Async	Async	Async	Async
Two DB44 + Two RJ48	Async/Sync	Async/Sync	Async	Async/Sync	Async/Sync	Async	Async	Async

Connector	Eight RJ48 (port 1 to port 8) DB44 (port1,port2,port3), DB44 (port4,port5,port6), RJ48 (port7) and RJ48(port8)
Conversion Cable	A three-into-one conversion cable adapts the DB44 connector to 3 connecters (one DB9S and two DB25S)
Electrical	RS232 Interface, DCE

Co-directional Interface

Interface	ITU G.703 64 Kbps co-directional interface
Connector	120ohm, RJ48
Line Distance	Up to 500 meters
Loopack	DTE Payload Loopback, Local Loopback

C37.94 Interface

Source	LED
Wavelength	820nm 2Km reach
Connector	ST
Optical Budget	50 Mircon core/9.6 db 62.5 Mircon core/ 15db

Dry Contact Interface

Inputs -		**Outputs -**	
8-channel	2-port per card, 4-pair per port	8-channel	8-pair per card
Connector	RJ45	Connector	Screw type
Internal Resistance	1 K	Initial Insulation Resistance	Min. 100M ohm (at 500 Vdc)
Activation Current	3 ma	Max. Current	5A
Deactivation Current	1.5 ma	Max. Voltage	100 Vdc, 250 Vac
Allowable Current	4 ma		

Dry Contact Type B Interface

Inputs -		**Outputs -**	
8-channel	2-port per card, 4-pair per port	8-channel	8-pair per card
Connector	RJ45	Connector	Screw type
Internal Resistance	100 K	Initial Insulation Resistance	Min. 1000M ohm (at 500 Vdc)
Activation Current	3 ma	Max. Current	2A
Deactivation Current	1.5 ma	Max. Voltage	220 Vdc, 250 Vac
Allowable Current	4 ma		

Voice Card (Q2EM, Q4EM)

Connector	DB44 connector with external DB44 to 4 RJ45 connector cable
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF
Encoding	A-law or μ-law, user selectable per card
Impedance	Balanced 600 ohm or 900ohm
Longitudinal Conversion Loss	> 46dB
Longitudinal Balance	> 63dB
Gain Adjustment (all port settings)	Normal mode 0, -3, -6 or +7 dB for transmit (D/A) gain 0, -3, -6 or +10 dB for receive (A/D) gain
Signal/Distortion	> 25dB with 1004 Hz, 0dBm input
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz
Idle Channel Noise	Max. –65 dBm0p
Signaling	Type I, II, III, IV, V and TO (Transmit Only) signaling options (manufacture option) Side: A or B (manufacture option) Wire: 2 wire or 4 wire (manufacture option)
In-band signaling tones	transparent
Modems	Full compatibility with V.90 modems

Voice Card (8EM)

Connector	Eight RJ45
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF
Encoding	A-law or μ-law, user selectable together for all
Impedance	Balanced 600 or 900 ohms
Longitudinal Conversion Loss	> 46dB
Longitudinal Balance	> 63dB
Gain Adjustment (Per-port setting)	-10 to +7 dB / 0.1dB step for transmit (D/A) gain -10 to +14 dB / 0.1dB step for receive (A/D) gain
I/O voice power range	A/D digital input level: -66 dBm (0.00039 Vrms) ~ + 3 dBm (1.09 Vrms) D/A analog output level: -66 dBm (0.00039 Vrms) ~ + 7 dBm (1.74 Vrms)
Signal/Distortion	> 25dB with 1004 Hz, 0dBm input
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz
Carrier connection	Side A (exchange side) and Side B (carrier side) setup by side switch
Idle Channel Noise	Max. –65 dBm0p
wire mode	2 wire and 4 wire (programmable)
Signaling	Type 1, Type 2, Type 3, Type 4, and Type 5, Transmit only (programmable)
Modems	Full compatibility with V.90 modems

All in-band signaling tones are carried transparently by the digitizing process.
Customer is responsible for in-band signaling compatibility between a telephone and a switch, or between a PBX and a switch.

Voice Card 12 MAG (Magneto)

Connector	Twelve RJ11
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF
Encoding	A-law or μ-law, user selectable together for all
Impedance	Balanced 600 or magneto telephone impedance match
Longitudinal Conversion Loss	> 46dB
Gain Adjustment	-21 to +10 dB / 0.1dB step transmit & receive
Signal/ Distortion	> 25dB with 1004 Hz, 0dBm input
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz, coincide with ITU-T G.712
Idle Channel Noise	Max. –65 dBm0p
Min Detectable Ringing Voltage	16 Vrms
Ringing Detectable Across	L1 and L2 (Tip and Ring), L1 and GND (Tip and GND)
Ringing Generation	Voltage: 76 Vrms (sine wave) Frequency: 20Hz Cadence: 1 sec on 2 sec off, or 2 sec on 4 sec off
Ringing Send Across	L1 and L2 (Tip and Ring), L1 and GND (Tip and GND)
Signaling	Magneto MRD(Ringing across Tip and Ring or Tip and Ground)
Signaling Bit A,B,C,D	Programable

Signaling is carried transparently by the digitizing process.
Use Magneto card default setting for communications between magneto telephones
Use Magneto card PLAR mode setting for communications between a magneto telephone and a regular telephone

Conference Card (will be updated)

RS232 Interface

Data Port	2-ports per card
ASYNC Data Rate	300, 600, 1.2K, 2.4K, 4.8K, 9.6K, 19.2K
SYNC	not supported
Connector	Two DB9, DCE, female

FXS Voice Interface

Connector	Two RJ11
Encoding	G.723
Longitudinal Conversion Loss	> 46dB
Cross Talk Measure	Max -70dBm0
Gain Adjustment	transmit (D/A) gain 0, +6dB receive (A/D) gain +6, 0, -6dB
Signal/ Distortion	> 25dB with 1004 Hz, 0dBm input
Idle Channel Noise	Max. –65 dBm0p
Loop Resistance	Max 1800 ohm
FXS Loop Feed	Normal -48 Vdc with 25mA current limit
FXS Ringing	2 REN 20Hz 76 Vrms 2 sec on / 4 sec off for 1 min, or 1 sec on / 2 sec off for 30 sec (programmable)
Signaling	Loop Start, DTMF

E&M Voice Interface

Connector	Two RJ45
Encoding	G.723
Impedance	Balanced 600 ohms
Longitudinal Conversion Loss	> 46dB
Gain Adjustment	transmit (D/A) gain 0, +6dB receive (A/D) gain +6, 0, -6dB
Signal/Distortion	> 25dB with 1004 Hz, 0dBm input
Idle Channel Noise	Max. –65 dBm0p
Carrier Connection	Side A = exchange side, Side B = carrier side (Jumper selectable)
Phone line power+12V	Type P (Jumper enable)
Operation mode	Master, standard (Jumper selectable)
Wire Mode	4 wire
Signaling Type	Type 1, Type 4, and Type 5 (Jumper selectable)
EM Ringing	Single rainging for 5 sec only 2 sec on / 4 sec off for 1 min, or 1 sec on / 2 sec off for 30 sec (programmable)

Voice Card (QFXS, QFXO)

Connector	Four RJ11	
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF	
Encoding	A-law or μ-law, user selectable per card	
AC impedance	Balanced 600 or 900 ohms, user selectable per card	
Longitudinal Conversion Loss	> 46dB	
Loss Adjustment	0, 3, 6, or 9 dB transmit & receive, user selectable per card	
Signal/ Distortion	> 25dB with 1004 Hz, 0dBm input	
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz	
FXS Loop Feed	Nominal -48 Vdc with 25mA current limit per port	
FXS Ringing	1 REN at 5000 meters per port 20 Hz, other frequencies (manufacture option): 16.7 Hz, 25 Hz, 50 Hz 76 Vrms (sine wave) User selectable ring cadence per card for PLAR function: 2 sec on 4 sec off, or 1 sec on 2 sec off	
FXO Ringing REN	Ringing REN	0.5B (AC)
	Detectable Ringing	25 Vrms
	Loop Resistance	≤ 1800 Ω
	DC impedance (ON-HOOK)	> 1M Ω
	DC impedance (OFF-HOOK)	235 Ω @ 25mA feed 90 Ω @ 100mA feed
Metering Pulse	12 KHz/16 KHz • Power: 10dBm • Sensitivity: -18dBm to -45dBm (manufacture option)	
Signaling	Loop Start, GND-Start, Metering Pulse (12 KHz, 16 KHz), DTMF, Dialing Pulse, PLAR, Battery Reverse (support Line Reverse Signaling for Billing)	
In-band signaling tones	transparent	

Voice Card (12FXS,12FXO,24FXS,24FXO)

Connector	Twelve RJ11	
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF	
Encoding	A-law or μ-law, user selectable together for all	
AC Impedance	Balanced 600 or 900 ohms (selectable together for all)	
Longitudinal Conversion Loss	> 46dB	
Cross talk measure	Max -70dBm0	
Gain Adjustment	-21 to +10 dB / 0.1dB step transmit & receive	
Signal/ Distortion	> 25dB with 1004 Hz, 0dBm input	
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz, coincide with ITU-T G.712	
Idle Channel Noise	Max. –65 dBm0p	
Variation of Gain	±0.5dB	
FXO	Ringing REN	0.5B (AC)
	Detectable Ringing	25 Vrms
	Loop Resistance	≦1800 Ω
	DC Impedance (ON-HOOK)	> 1M Ω
	DC Impedance (OFF-HOOK)	235 Ω@ 25 mA feed 90 Ω@ 100 mA feed
FXS Loop Feed	Normal -48 Vdc with 25mA current limit	
FXS signalling	Normal / Automatic Ring down	
FXS Ringing	1 REN at 5K meters per port 16.7Hz, 20Hz, 25Hz, 50Hz, user selectable for all ports 38 to 85 Vrms (sine wave), 76 Vrms for default Ring Voltage 2 sec on 4 sec off, or 1 sec on 2 sec off optional for PLAR	
Signaling	Loop Start, DTMF, pulse, PLAR, Battery Reverse	
Optional Signaling (for special order)	Ground Start, Metering pulse (12 KHz, 16 KHz), and P(in PLAR mode, PLAR signalling bits are programmable.	
Signaling Bit A,B,C,D	Programable bit	

- All in-band signaling tones are carried transparently by the digitizing process.
- Customer is responsible for in-band signaling compatibility between a telephone and a switch, or between a PBX and a switch.

Clock Source
Internal, E1/T1 Line, External (E1/T1/2048 KHz)

Alarm Relay
Alarm Relay, Fuse alarm, and performance alarm

System Configuration Parameters
Active Configuration, Stored Configuration, and Default Configuration (Stored in Non-volatile Memory)

Supervisor

RS232, VT100 - front panel	10 Base-T, Ethernet, SNMP - front panel
CONSOLE/SLIP - front panel	In-band 64 Kbps

Performance Monitor

Performance Registers	Last 24 hours performance in 15 minute intervals and last 7 days in 24 hour summaries
Separate Registers	Network, user, and remote site
Performance Reports	Reports include E1 Bursty Errored Second, Severe Errored Second, Degraded Minutes, and Controlled Slip Second. Also available in Statistics (%)
Alarm Queue	Containing 40 alarm records which record the latest alarm type, location, and date & time
Threshold	Bursty Seconds, Severely Errored Second, Degraded Minutes

Diagnostics Test Line

Loopback	E1/T1 interface (Line Loopback, Payload Loopback, Local Loopback) U interface (Local Loopback, Payload Loopback)
Test Pattern	E1/T1 interface (215-1 PRBS, 3-in-24, 1-in-8, 2-in-8, 1:1 patterns) U/DTE interface (211-1 BERT)

Front Panel

LED	1 per U/V.35-interface, ACO, Power, SYNC/TEST, LOF, BPV, RAI/AIS

Physical /Electrical

	AM3440-A	AM3440-B	AM3440-C
Dimensions	432.4 x 220 x 223.5 mm (W×H×D)	438 x 110 x 224 mm (W×H×D)	438 x 132 x 224 mm (W×H×D)
Power	Single/ Dual -48 Vdc: -36 to -75 Vdc, 100 Watts max. Single/ Dual -48 Vdc: -36 to -75 Vdc, 150 Watts max. Single/ Dual -24 Vdc: -18 to -36 Vdc, 150 Watts max Single/ Dual -125 Vdc: -40 to -150 Vdc, 100 Watts max	Single/ Dual -48 Vdc: -36 to -75 Vdc, 100 Watts max. Single AC: 100 to 240 Vac, 50/60 Hz	Single/ Dual -48 Vdc: -36 to -75 Vdc, 100 Watts max. Single AC: 100 to 240 Vac, 50/60 Hz
Temperature	0-50°C	0-50°C	0-50°C
Humidity	0-95%RH (non-condensing)	0-95%RH (non-condensing)	0-95%RH (non-condensing)
Mounting	Desk-top stackable, 19" /23" rack mountable	Desk-top stackable, 19" /23" rack mountable	Desk-top stackable, 19" /23" rack mountable
Line Power Supply	Available only with DC power for G.SHDSL card only	N/A	N/A
Power Consumption	Max 110 Watts	Max 45 Watts	Max 57 Watts

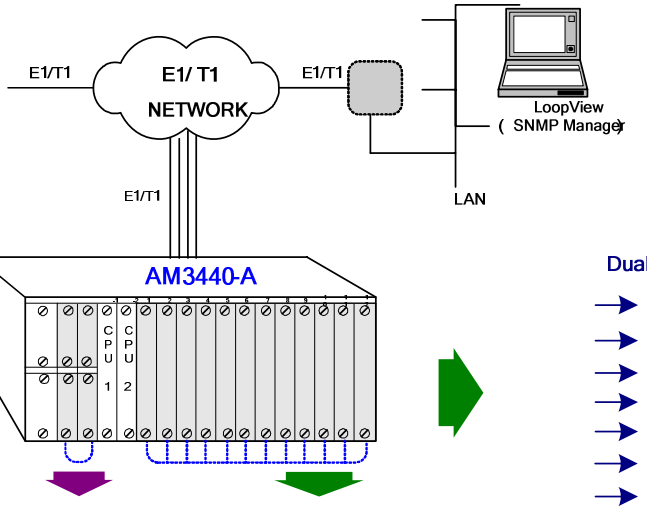
Certification

AM3440-A	AM3440-B	AM3440-C
EN55022 Class A, EN50024, FCC Part 15 Class A, FCC Part 68, CS-03, IEC60950, UL60950	EN55022 Class A, EN50024, EN300 386, FCC Part 15 Class A, FCC Part 68, CS-03, IEC60950-1, EN60950-1	EN55022 Class A, EN50024, EN300 386, FCC Part 15 Class A, IEC60950-1, EN60950-1

Compliance
ITU G.703, G.704, G.706, G.732, G.736, G.823, G.826, G.711, G.775, O.151, V.11, V.28, V.54

* Future Option

Application Illustration:



Mini- Slot plug - in Cards

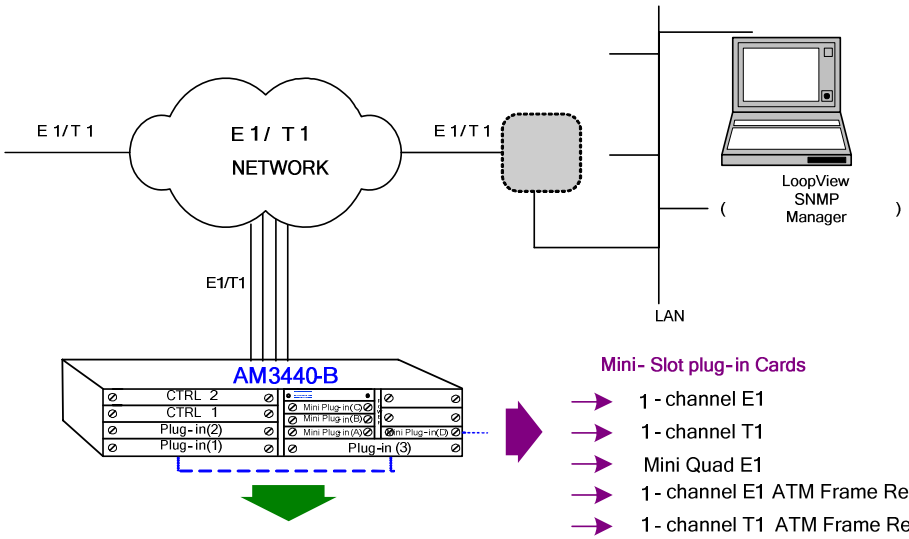
- 1 - channel E1
- 1 - channel T1
- Mini Quad E1
- 1 - channel E1 ATM Frame Relay
- 1 - channel T1 ATM Frame Relay
- 32 WAN port Router
- 64 WAN port Router
- Fiber Optical Interface
- 3 - channel Terminal Server
- 1 - channel DTE (1X.21, 1V.35, 1RS232, or 1EIA530)

Single- Slot plug - in Cads

- 3 - channel E1(future option)
- 4 - channel E1
- 4 - channel T1
- 8 - channel OCU-DP
- 2 - channel G.SHDSL w/o line power
- 4 - channel G SHDSL w/o line power
- 8 - channel G.703 64 Kbps
- 8 - channel Dry Contact I/O
- 8 - channel Dry Contact I/O type B
- 8 - channel 2 W/4 W E&M
- 12- channel FXS
- 12- channel FXO
- 12- channel Magneto
- 1 - channel C37.94
- 4 - channel C37.94
- 8 - channel RS232 with X.50 subrate
- 8 - LAN-port/64-WAN-port Router-B
- Conference card

Dual- slot plug - in cards:

- 6 - channel X.21/V.11
- 6 - channel V.35
- 6 - channel V.36
- 6 - channel EIA530/RS449
- 5 - channel RS232 with X.50 subrate
- 24- channel FXS
- 24- channel FXO
- 2 - channel G.SHDSL w/line power
- 4 - channel G.SHDSL w/line power



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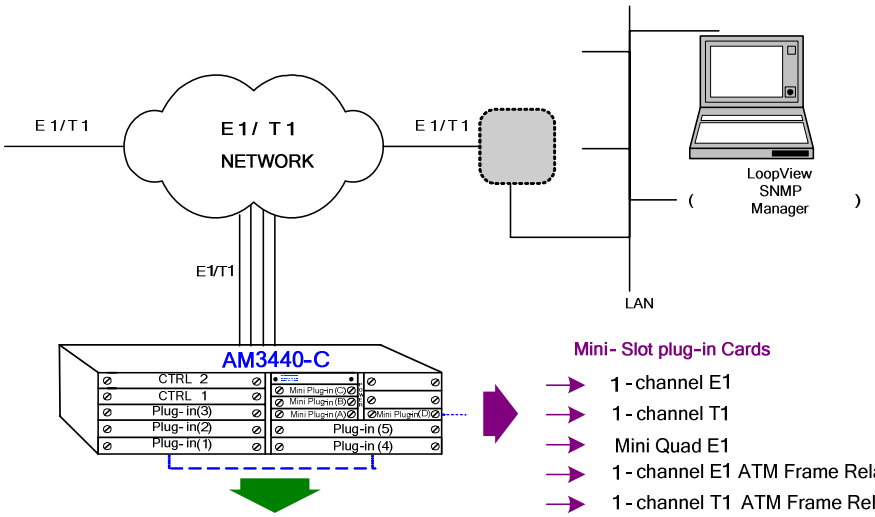
- 1- channel channel DTE (1X.21, 1V.35, 1RS232, or 1EIA530)



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